

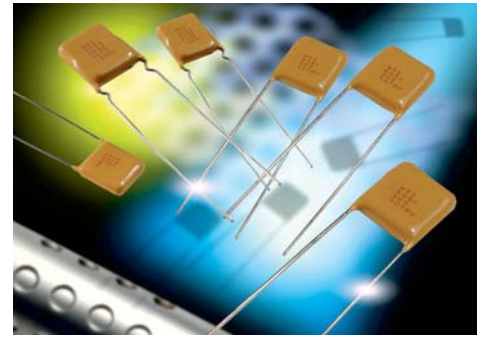
# SMPS Capacitors (SE Style)



## Extended Commercial Radial Range

### PRODUCT OFFERING – X7R

AVX SE styles offer capacitance extension to popular SK ranges. The CV product for SE-series, X7R capacitors (TCC:  $\pm 15\%$  over  $-55$  to  $+125^\circ\text{C}$ ) compares favorably to high CV ranges offered by other suppliers in much less stable Y5U dielectric (TCC:  $+22/-56\%$  over  $-30$  to  $+85^\circ\text{C}$ ). SE style capacitors are conformally coated and are designed for input and output filtering applications in switch mode power supplies.



### ELECTRICAL SPECIFICATIONS

#### Temperature Coefficient

X7R: Temperature Coefficient  $\pm 15\%$ ,  $-55^\circ$  to  $+125^\circ\text{C}$

#### Capacitance Test (MIL-STD-202 Method 305)

X7R:  $25^\circ\text{C}$ ,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

#### Dissipation Factor $25^\circ\text{C}$

X7R: 2.5% Max @  $25^\circ\text{C}$ ,  $1.0 \pm 0.2$  Vrms (open circuit voltage) at 1KHz

#### Insulation Resistance $25^\circ\text{C}$ (MIL-STD-202 Method 302)

X7R: 100K M $\Omega$  or 1000 M $\Omega$ - $\mu\text{F}$ , whichever is less.

#### Insulation Resistance $125^\circ\text{C}$ (MIL-STD-202 Method 302)

X7R: 10K M $\Omega$  or 100 M $\Omega$ - $\mu\text{F}$ , whichever is less.

#### Dielectric Withstanding Voltage $25^\circ\text{C}$ (Flash Test)

X7R: 250% rated voltage for 5 seconds with 50 mA max charging current.

#### Life Test (1000 hrs)

X7R: 200% rated voltage at  $+125^\circ\text{C}$

#### Moisture Resistance (MIL-STD-202 Method 106)

X7R: Ten cycles with no voltage applied.

#### Thermal Shock (MIL-STD-202 Method 107, Condition A)

#### Immersion Cycling (MIL-STD-202 Method 104, Condition B)

#### Resistance To Solder Heat (MIL-STD-202, Method 210, Condition B, for 20 seconds)

### HOW TO ORDER

| SE           | 01                             | 3  | C   | 125   | M   | A  | A   | *                                |
|--------------|--------------------------------|--|---|---|---|--|---|----------------------------------|
| <b>Style</b> | <b>Size</b><br>See chart below | <b>Voltage</b><br>25V = 3<br>50V = 5<br>100V = 1 | <b>Temperature Coefficient</b><br>X7R = C | <b>Capacitance Code</b><br>(2 significant digits + no. of zeros)<br>22 nF = 223<br>220 nF = 224<br>1 $\mu\text{F}$ = 105<br>100 $\mu\text{F}$ = 107 | <b>Capacitance Tolerance</b><br>X7R: K = $\pm 10\%$<br>M = $\pm 20\%$<br>Z = $+80, -20\%$ | <b>Test Level</b><br>A = Standard<br>B = Hi-Rel* | <b>Leads</b><br>A = Tin/Lead<br>R = RoHS<br>Compliant | <b>Packaging</b><br>(See Note 1) |

**Note 1:** No suffix signifies bulk packaging, which is AVX standard packaging. Parts available tape and reel per EIA-468. Use suffix "TR1" if tape & reel is required.

Note: Capacitors with X7R dielectrics are not intended for applications across AC supply mains or AC line filtering with polarity reversal. Contact plant for recommendations.

\*Hi-Rel screening consists of 100% Group A, Subgroup 1 per MIL-PRF-39014.

| TAPE & REEL QUANTITY |        |
|----------------------|--------|
| Part                 | Pieces |
| SE01                 | 2000   |
| SE03/SE53            | 1000   |
| SE04/SE54            | 1000   |
| SE05/SE55            | 500    |
| SE06/SE56            | 500    |

| RoHS      |           |
|-----------|-----------|
| Part      | Available |
| SE01      | Yes       |
| SE03/SE53 | Yes       |
| SE04/SE54 | Yes       |
| SE05/SE55 | Yes       |
| SE06/SE56 | Yes       |

Not RoHS Compliant



For RoHS compliant products, please select correct termination style.



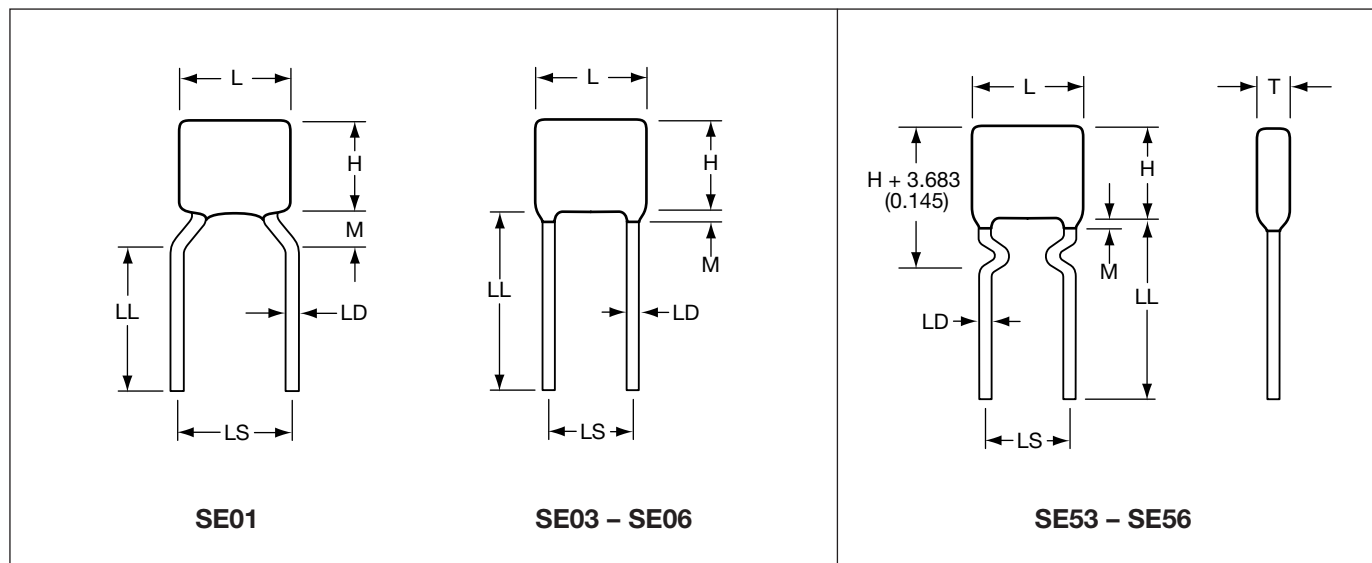
Performance of SMPS capacitors can be simulated by downloading SpiCalci software program - <http://www.avx.com/SpiApps/default.asp#spicalci>  
Custom values, ratings and configurations are also available.



# SMPS Capacitors (SE Style)



## Product Offering – X7R



### X7R Capacitance Range ( $\mu\text{F}$ )

| Style     | 25 WVDC<br>min./max. | 50 WVDC<br>min./max. | 100 WVDC<br>min./max. |
|-----------|----------------------|----------------------|-----------------------|
| SE01      | 0.47/1.5             | 0.39/1.0             | 0.33/0.68             |
| SE03/SE53 | 2.7/6.8              | 2.2/4.7              | 1.8/3.3               |
| SE04/SE54 | 5.6/12               | 3.9/10               | 3.3/6.8               |
| SE05/SE55 | 8.2/18               | 6.8/12               | 4.7/10.0              |
| SE06/SE56 | 18/39                | 12/27                | 6.8/15                |

## DIMENSIONS

millimeters (inches)

| Style                    | L (max.)     | H (max.)  | T (max.)     | LS (nom.)   | LD (nom.)     |
|--------------------------|--------------|---|--------------|---|---------------|
| SE01                     | 5.08 (0.200) | 5.08 (0.200)                                    | 5.08 (0.200) | 5.08 (0.200)  | 0.508 (0.020) |
| SE03/SE53                | 7.62 (0.300) | 7.62 (0.300)                                    | 5.08 (0.200) | 5.08 (0.200)  | 0.508 (0.020) |
| SE04/SE54                | 10.2 (0.400) | 10.2 (0.400)                                    | 5.08 (0.200) | 5.08 (0.200)  | 0.508 (0.020) |
| SE05/SE55                | 12.7 (0.500) | 12.7 (0.500)                                    | 5.08 (0.200) | 10.2 (0.400)  | 0.635 (0.025) |
| SE06/SE56                | 22.1 (0.870) | 15.2 (0.600)                                    | 5.08 (0.200) | 20.1 (0.790)  | 0.813 (0.032) |
| L = Length<br>H = Height |              | T = Thickness<br>M = Meniscus 1.52 (0.060) max. |              | LS = Lead Spacing Nominal $\pm 0.787$ (0.031)<br>LL = Lead Length 50.8 (2.000) max./25.4 (1.000 min.)<br>LD = Lead Diameter Nominal $\pm 0.050$ (0.002) |               |

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